

Massachusetts Water Conservation Standards Draft, 2006

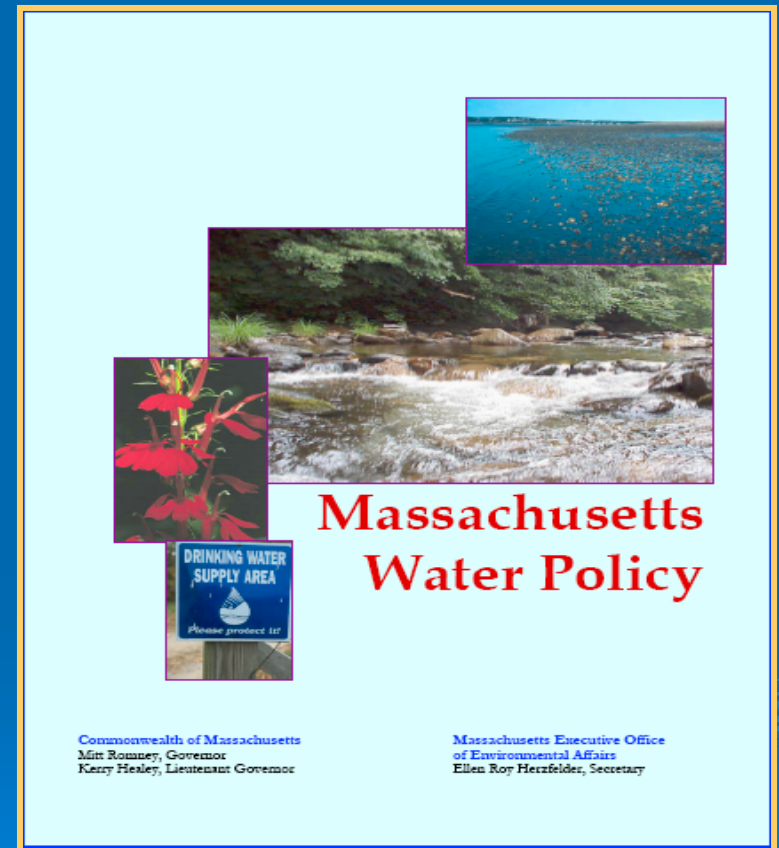
Presentation for the Massachusetts
Water Resources Conference

April 18, 2006



Massachusetts Water Policy, 2004

- “Revise the Water Conservation Standards to include measurable criteria for use in permitting decisions, grant awards and loans that can be incorporated into the Stress Framework”
- Specifically consider: new technologies, ITA & WMA performance standards, lawn and landscape standards, stress



Updating the Water Conservation Standards (WCS): Process

- EOEA/DCR convened a Water Conservation Working Group in February 2005
- 6 Meetings held Feb -- June 2005
- Representation:
 - EOEA, DEP, DCR, DAR
 - Mass Audubon/Mass Instream Flow Task Force
 - Environmental Business Council
 - Mass Water Works Association
 - Mass Clean Water Council
 - Massachusetts Water Resources Authority

Updating the WCS: Process

- Outreach to key constituencies
- EOE/DCR staff received input from:
 - Mass Instream Flow Task Force
 - Water Supply Citizen's Advisory Committee
 - Regional Planning Agencies
 - Mass Municipal Association
 - Mass Riverways
 - Amy Vickers
- Water Conservation Working Group Agenda:
 - Review 1992 Water Conservation Standards- what stays, what goes, what should be added?
 - Review ITA Performance Standards- should anything be adopted from ITA to WCS?
 - Review Guidance for WMA Permitting- should anything be adopted from WMA to WCS?
 - Identify data needs

Updating the WCS: References

- Manuals and Handbooks
 - Handbook of Water Use and Conservation, Vickers 2001
 - Drought Management Planning, AWWA 1992
- Water Use and Conservation Studies & Surveys
 - North American Residential End Use Study, AWWA 1998
 - Residential End Uses of Water Study, AWWA 1999
 - Seattle Home Water Conservation Study, US EPA 2000
 - 2004 Massachusetts Water Survey, Tighe and Bond 2004
 - Technical Evaluation- Title 5, DeFeo, Wait and Associates for MA DEP
- Tips and Guidance
 - 2005 Greenscapes Reference Guide, North and South River Watershed Association
 - A Homeowner's Guide to Environmentally Friendly Lawncare, DAR 1997
 - Guide to Lawn and Landscape Water Conservation, WRC 2002
 - More than Just a Yard, EOEA 2004
 - Outdoor Water Conservation, MWRA 2005
- Databases
 - Public Water Supply Annual Statistical Reports, 1999, 2002, 2003, MA DEP

Updating the WCS: Draft Outline

➤ Conservation Standards and Recommendations

- 1) Integrated Planning
- 2) Water Audits and Leak Detection
- 3) Metering
- 4) Pricing
- 5) Residential
- 6) Public Sector
- 7) Industrial, Commercial and Institutional
- 8) Agricultural
- 9) Lawn and Landscape
- 10) Public Education and Outreach

*new sections highlighted in orange

Updating the WCS: Standards and Recommendations

- Standards: **Achievable, implementable, and practical** measures that should be adopted by water suppliers, small and large water users, and state agencies in carrying out their water resources planning and management programs, and in issuing permits or approvals that involve water use.
- Recommendations: Should be **considered and adopted** wherever possible...Although they may not be as widely achievable...they should be considered goals for the future and indicate the trend that should be followed.
- Final Draft will include a cover letter that specifies how the standards will be applied

Updating the WCS: Draft Outline

➤ Appendices

- A. Water Bank Guidance
- B. DEP Water Audit and Leak Detection Survey Guidance Document
- C. Tables and Figures
- D. Residential Water Use Benchmarks
- E. Education and Outreach Materials
- F. Bylaws (private wells, water use restrictions, land clearing, water-wise landscaping)
- G. Water Conservation Coordinator Description
- H. BMPs for Selected Industries

1) Integrated Planning

Standards:

1. Develop a drought/demand management plan
2. Develop emergency management plans (per MassDEP Policy 87-05, or latest available version)
3. Develop a written program to comply with the Water Conservation Standards. Procedures readily available to all personnel, and posted online



2) Water Audits and Leak Detection

Standards:

1. Conduct the ASR water audit on an annual basis
2. Conduct complete system-wide leak detection every two (2) years unless:
 - The results of the ASR water audit indicate that leakage constitutes a small portion of the system's UAW; or
 - The volume of leaks detected through the most current leak detection survey (w/in previous 2 yrs) indicate insignificant leakage

In these cases, the water supply sytem should work with the regulatory agency (ies) to develop a more efficient schedule for leak detection.

3. Conduct field surveys for leaks and repair programs in accordance with the AWWA Manual 36

2) Water Audits and Leak Detection, cont.

Standards:

4. Repair all leaks as expeditiously as possible. Each community shall establish a priority system to implement leak repairs. Leaks causing property damage or affecting public safety should be fixed immediately.
5. Recognize water audits and leak detection and repair as expenses of the water supply system and include them in a full-cost pricing structure and annual budget.

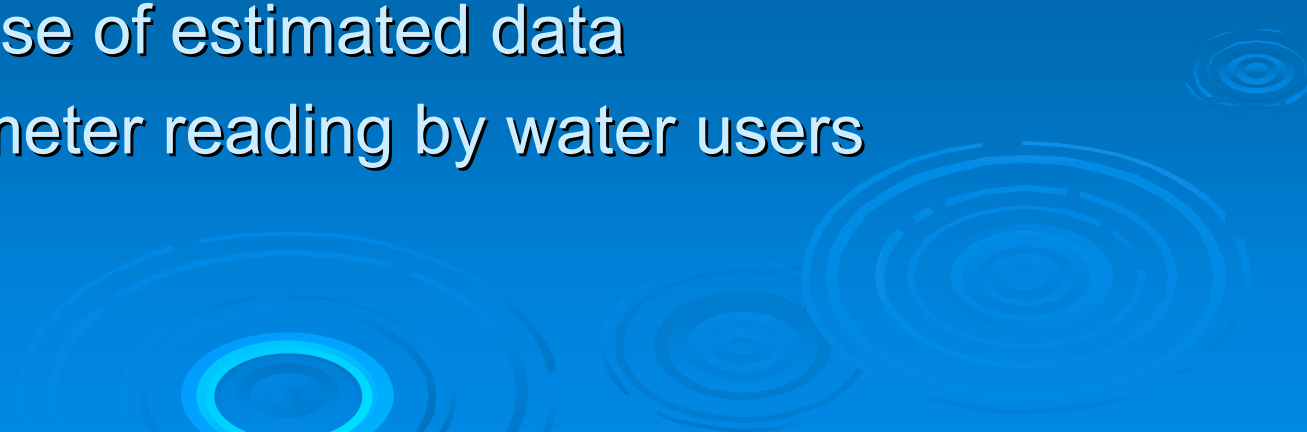
3) Metering

Standards:

1. 100% metering with meters of proper size and accuracy
2. Im
3. Quarterly meter reading and billing for domestic accounts, monthly if possible
4. Any meter used to record quantity should be calibrated according to its type and specification- consult AWWA Manual M6 for guidance.

3) Metering, cont.

Recommendations:

1. Meter Replacement Grant Program
 2. Water Meter Replacement/Repair Policy
 3. Monthly billing for large users
 4. Municipal control of commercially sized meters
 5. Remote reading and monthly billing
 6. Minimize use of estimated data
 7. Facilitate meter reading by water users
- 
- The background of the slide features several concentric circles representing water ripples, rendered in a lighter blue shade than the background, located in the bottom right and bottom center areas.

4) Pricing

Standards:

1. Full Cost Pricing

- Factor all costs- operations, maintenance, capital, and indirect (environmental impacts, watershed protection)
- Perform an annual rate evaluation
- Full cost pricing can take the form of various rate structures

Recommendations:

1. Establish conservation-oriented rate structures, e.g.- Increasing block rates, seasonal rates, uniform rates (if priced high enough)
2. Avoid decreasing block rates, flat fee rates, and uniform rate structures if set too low
3. Billing BMPs (consumer friendly, include gpcd)
4. Enterprise Accounts

5) Residential Water Use

Standards:

1. Install Water Efficient Plumbing Fixtures
2. Meet Efficiency Goals for Residential Water Use
 - All communities must strive for 65 rgpcd (indoor and outdoor)
 - If above 65, should implement a comprehensive residential conservation program-recommendations provide a menu of options for the program
 - If at or below 65, continue efforts to remain there
 - Caveats: Older communities, aging infrastructure, economically disadvantaged communities, large seasonal population may need more time, greater financial assistance

5) Residential Water Use cont.

Recommendations:

1. Promote Water Efficient Household Appliances
 - Tax incentives, rebates, update plumbing code, water conservation in MEPA review
2. Provide Residential Water Audits
3. Promote Efficient Non-landscape Outdoor Water Use
4. Promote Efficient Lawn and Landscape Water Use
1. Promote Waterless Plumbing Fixtures
2. Minimize/discourage garbage disposals



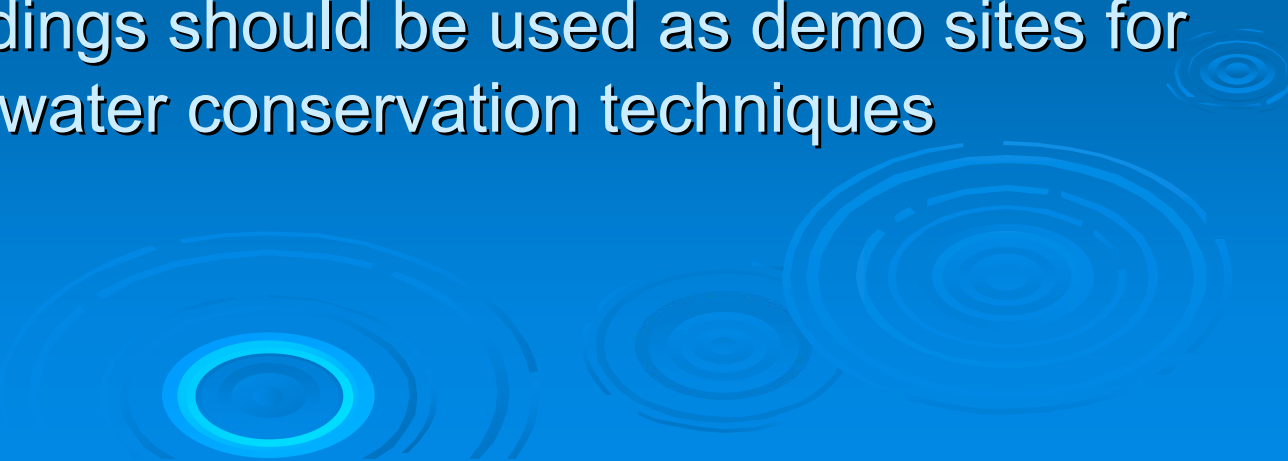
6) Public Sector

Standards:

1. Municipal and State Buildings:
 - Conduct indoor and outdoor audits
 - Analyze data for leaks and inefficient use
 - Focus on water consuming equipment
 - Practice good lawn and landscape water use
2. Water used by contractors should be metered
3. Strictly apply plumbing codes and incorporate other conservation measures in new and renovated buildings

6) Public Sector, cont.

Recommendations:

1. Public buildings should be retrofitted with equipment that reduces water use- devices should be identified to public
 2. Follow guidelines in Section 9 on Lawn and Landscape
 3. Public buildings should be used as demo sites for innovative water conservation techniques
- 
- Decorative graphic of concentric circles representing water ripples, located in the bottom right corner of the slide.

7) Industrial, Commercial Institutional (ICI)

Standards:

1. All ICI water users should carry out a water audit
2. Significant users (over 50,000 gpd) should strongly consider installing separate meters for processing and sanitary use
3. Significant users should aim to decrease their average water use by 10%
4. All ICI water users should develop and implement a water savings strategy
5. Comply with plumbing codes, use BAT for water conservation, and reuse treated wastewater to the extent possible

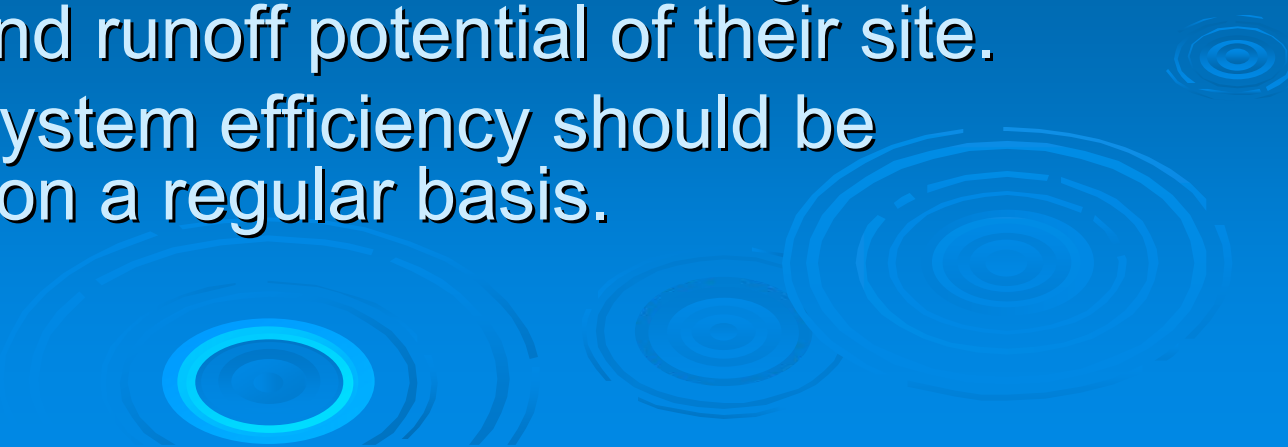
7) ICI, cont.

Recommendations:

1. Expand OTA scope to include water conservation
2. All ICI water users should install/retrofit water saving sanitary devices
3. Industrial and commercial users should work with code officials, state programs, etc. to promote water conservation
4. Commercial and industrial facilities with large impervious areas should consider rainwater harvesting
5. Follow guidelines in Section 9.0 Lawn and Landscape

8) Agricultural Water Use

Standards:

1. Agricultural producers should implement irrigation BMPs.
 2. Sprinkler irrigation system should be capable of uniform application of water and surface run-off should be minimized.
 3. Appropriate BMPs should be selected based upon the producer's understanding of the leaching and runoff potential of their site.
 4. Irrigation system efficiency should be evaluated on a regular basis.
- 
- Decorative graphic of concentric circles representing water ripples, located in the bottom right corner of the slide.

9) Lawn and Landscape

Standards:

1. Develop a seasonal demand management plan.
 - Identify water supply and environmental indicators to serve as water use restriction triggers
 - Outline increasingly stringent water use restrictions
2. Implement a water use restriction bylaw, ordinance or regulation to allow mandatory water use restrictions.
 - Restrictions tied to environmental and water supply indicators outlined in demand plan.

9) Lawn and Landscape, cont.

Recommendations

1. Overall Recommendation:

- Maximize efficient outdoor water use to meet a goal of outdoor water use comprising only a small portion of total water use, with a long-term goal of continuing to reduce this number through reliance on water-wise landscaping techniques and rainwater collection.

2. Numerous specific recommendations for:

- Owners and managers of residential, ICI lawns and landscapes,
- recreational fields,
- those using private wells,
- Municipalities and other PWS, State Agencies

Lawn and Landscape, cont.

Recommendations:

- Water only when necessary
- Abide by water restrictions
- Ensure adequate depth and type of soil (at least 6" of good topsoil)
- Avoid watering between 10am to 6pm or during precipitation
- Do not water lawns and do not install automatic lawn irrigation systems in water short communities. In all communities, strive to minimize use of potable public water supply to water lawns.

Lawn and Landscape

Recommendations:

- Install water conservation equipment and properly maintain automatic irrigation systems
- Conduct an Irrigation Audit
- Collect and reuse water for landscaping needs
- Mow lawns at the highest recommended height (at least 2.5 to 3 inches)
- Practice Water-wise, natural landscaping



10) Public Education and Outreach

Standards:

1. Each community should develop and implement an education and outreach plan.

Recommendations:

1. Communities should hire a part- or full-time water conservation coordinator
2. The position of State Water Conservation Coordinator should be re-established
3. Consider using social marketing as a tool to build support for water conservation
4. Involve other town boards
5. Public Education programs should address the issue of why it's important for everyone to conserve (including private wells)

Updating the WCS: Next Steps

- October 20th- Public Hearing, EOEA Boston
- October 27th- Public Hearing, DEP Worcester
- November 1st- Public Comments Due
- Early November- reconvene the working group
- November 10th- WRC discussion of draft standards
- December 8th- Vote by WRC
- 2006- Develop and Implement Action Plan

Questions and Comments

